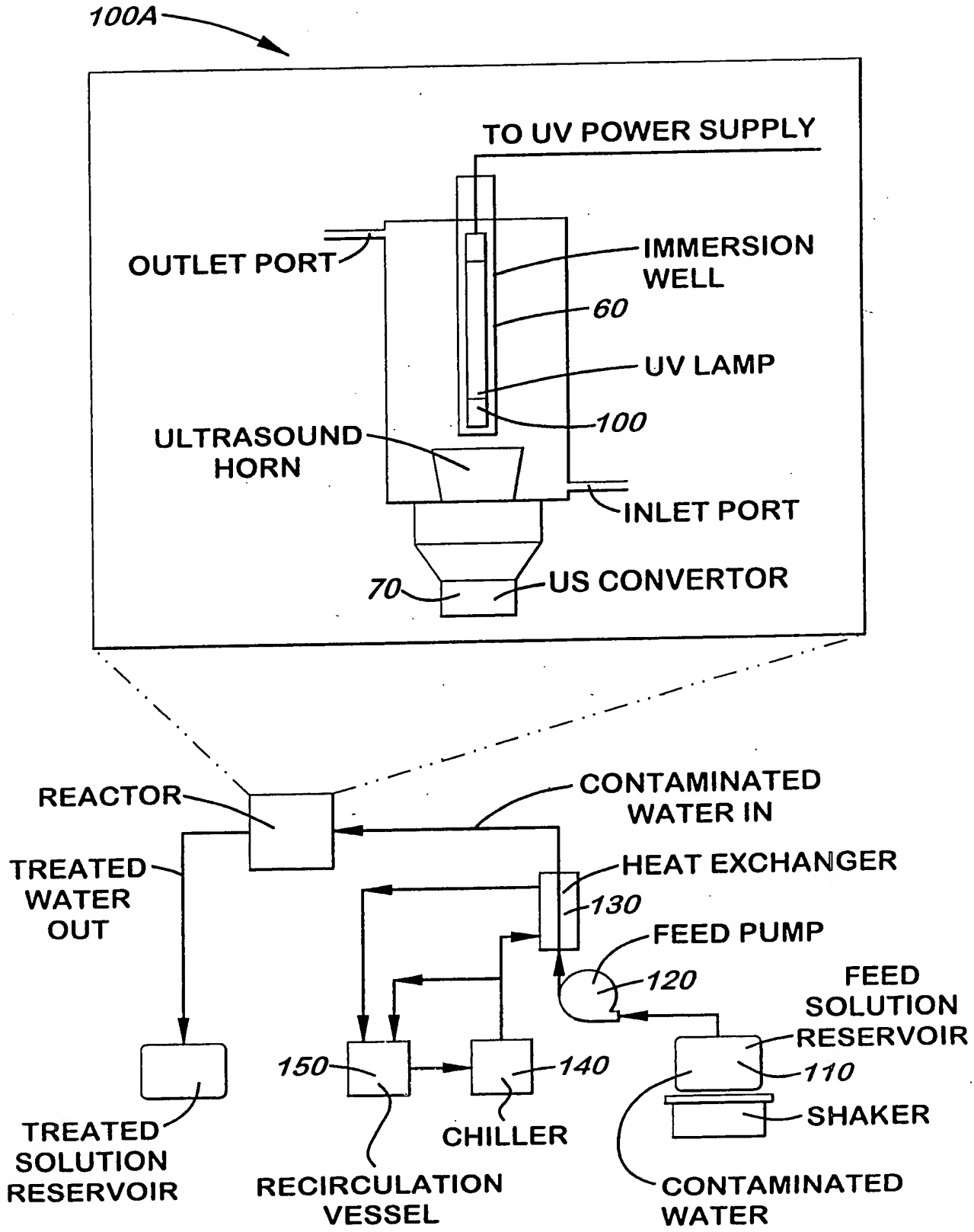

Fig. 1A

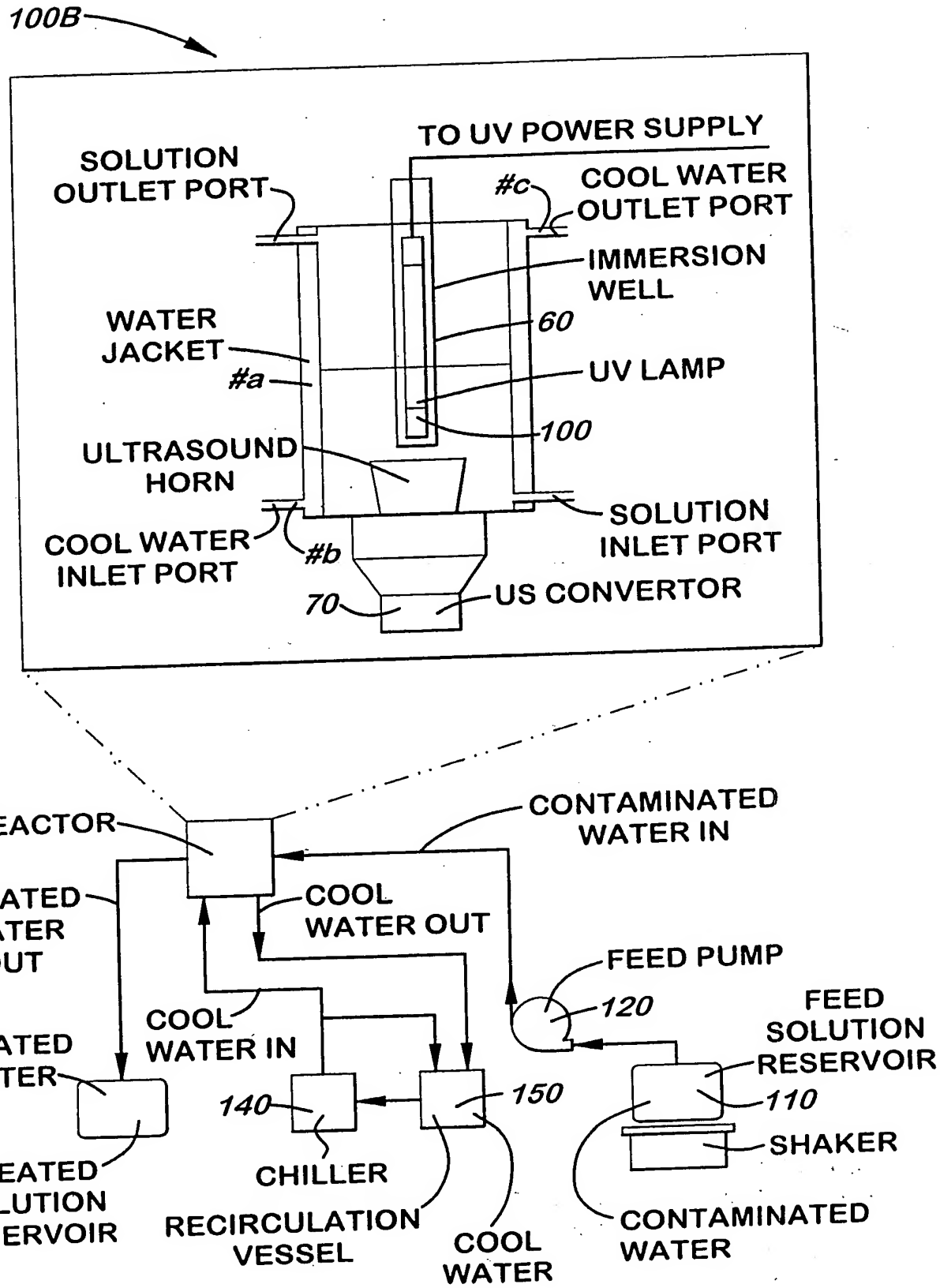
100B
TO UV POWER SUPPLY
SOLUTION OUTLET PORT
#c
COOL WATER OUTLET PORT
IMMERSION WELL
60
WATER JACKET
#a
UV LAMP
100
ULTRASOUND HORN
SOLUTION INLET PORT
COOL WATER INLET PORT
#b
70
US CONVERTOR
REACTOR
CONTAMINATED WATER IN
TREATED WATER OUT
COOL WATER OUT
FEED PUMP
120
FEED SOLUTION RESERVOIR
COOL WATER IN
TREATED WATER
140
150
110
SHAKER
TREATED SOLUTION RESERVOIR
CHILLER
RECIRCULATION VESSEL
COOL WATER
CONTAMINATED WATER

Fig. 1B

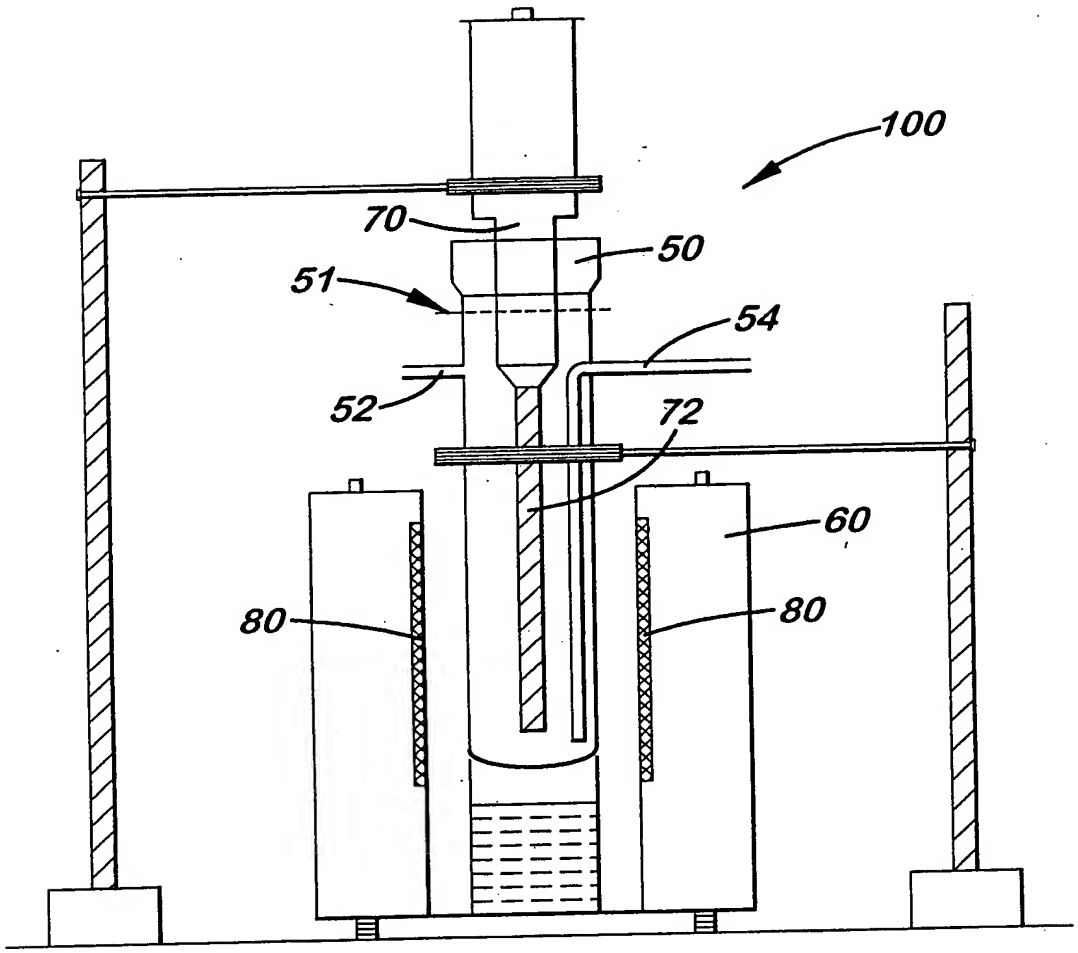

Fig. 2

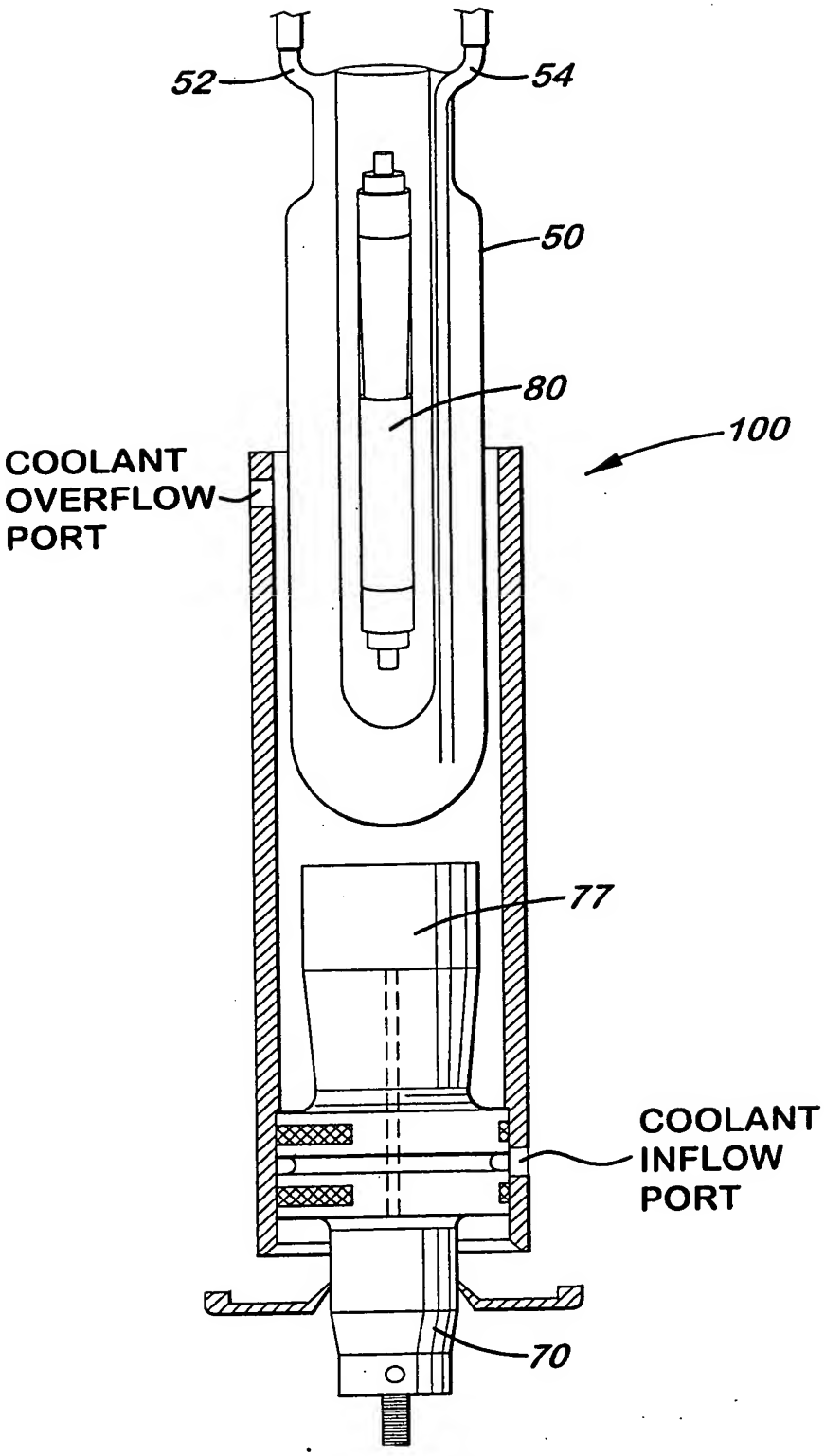
52
54
50
80
100
COOLANT
OVERFLOW
PORT
77
COOLANT
INFLOW
PORT
70

Fig. 3

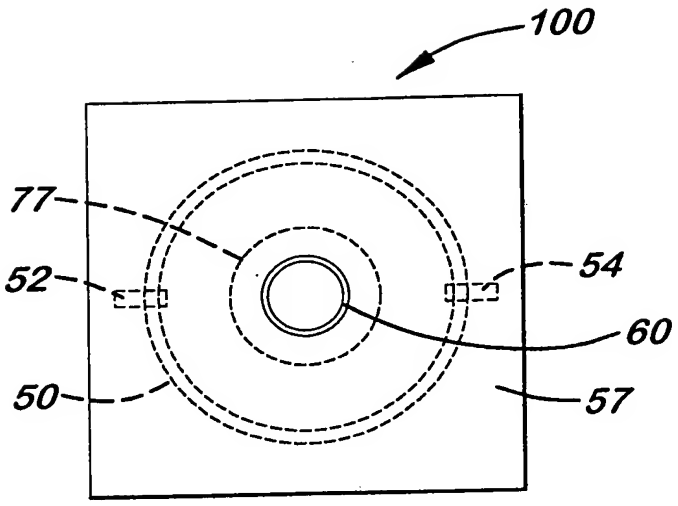

Fig. 4A(b)

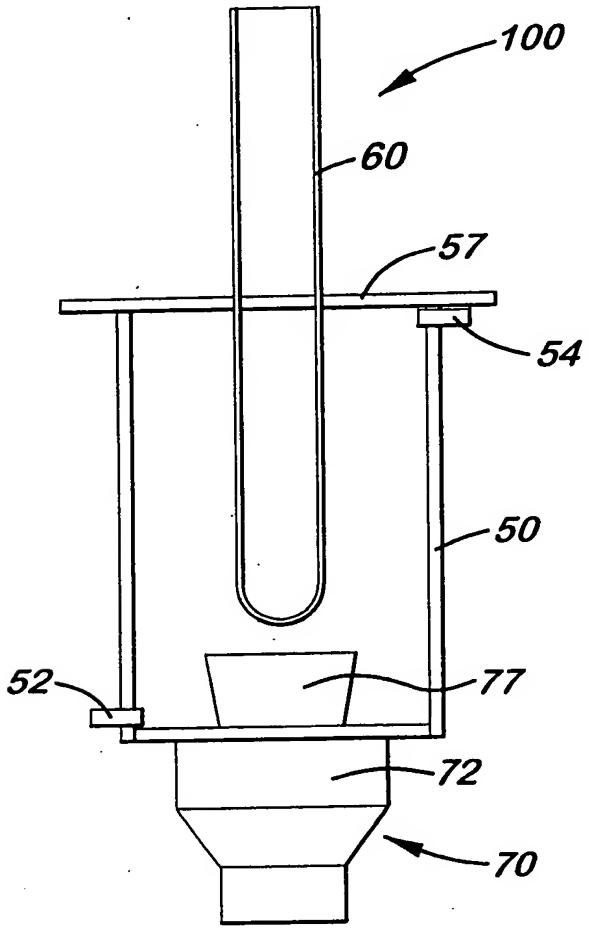

Fig. 4A(a)

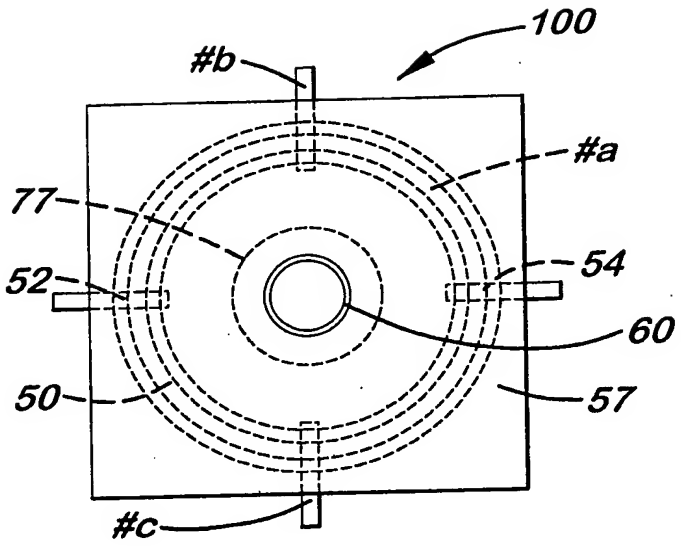

Fig. 4B(b)

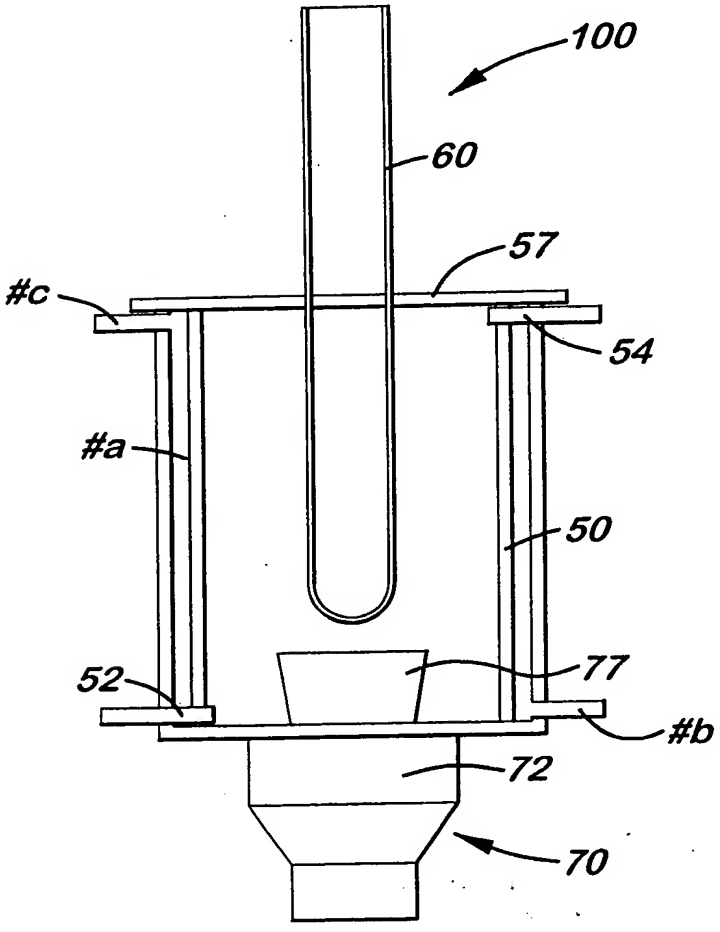

Fig. 4B(a)

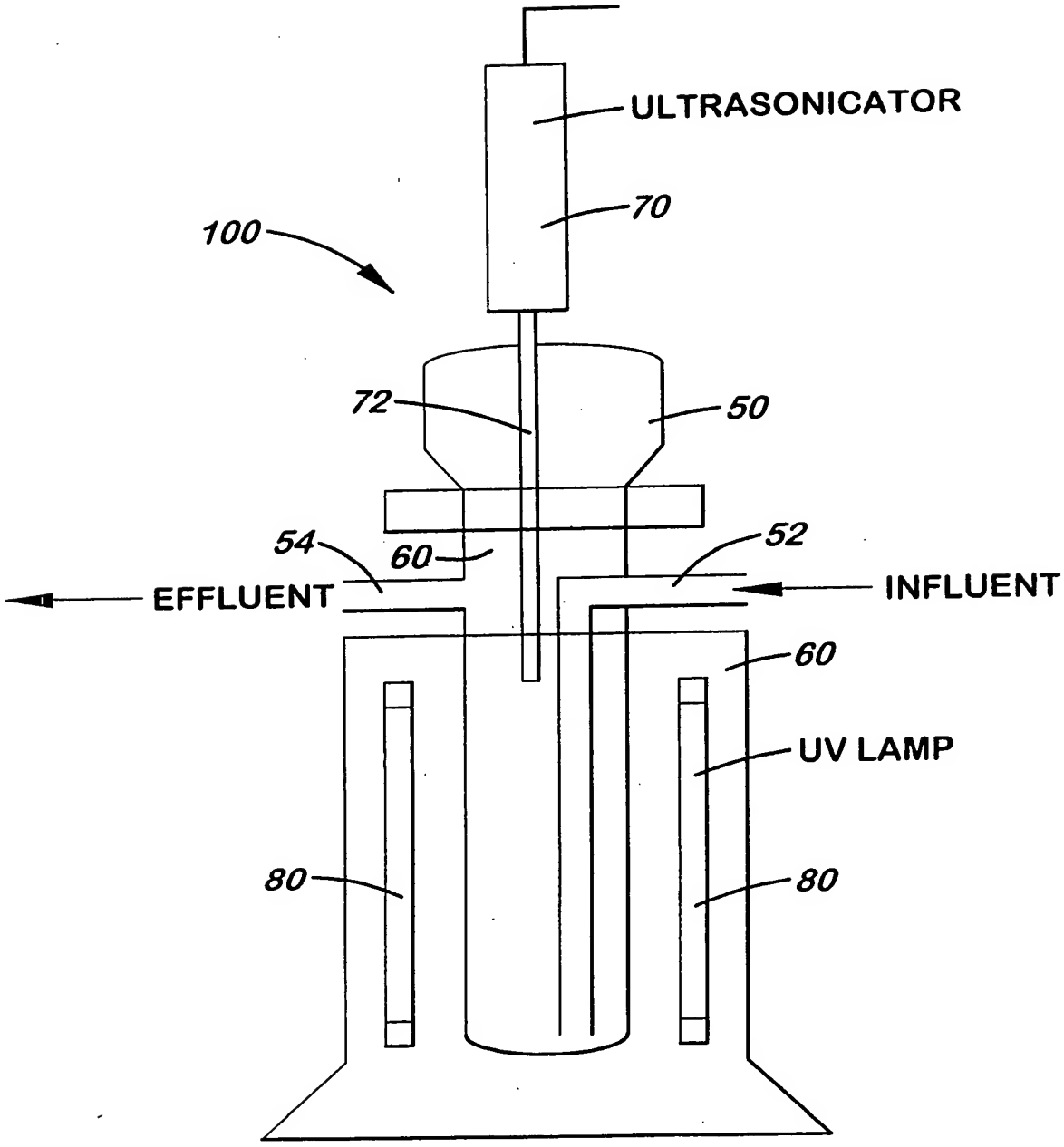
ULTRASONICATOR
70
100
72
50
54
60
52
EFFLUENT
INFLUENT
60
UV LAMP
80
80

Fig. 5

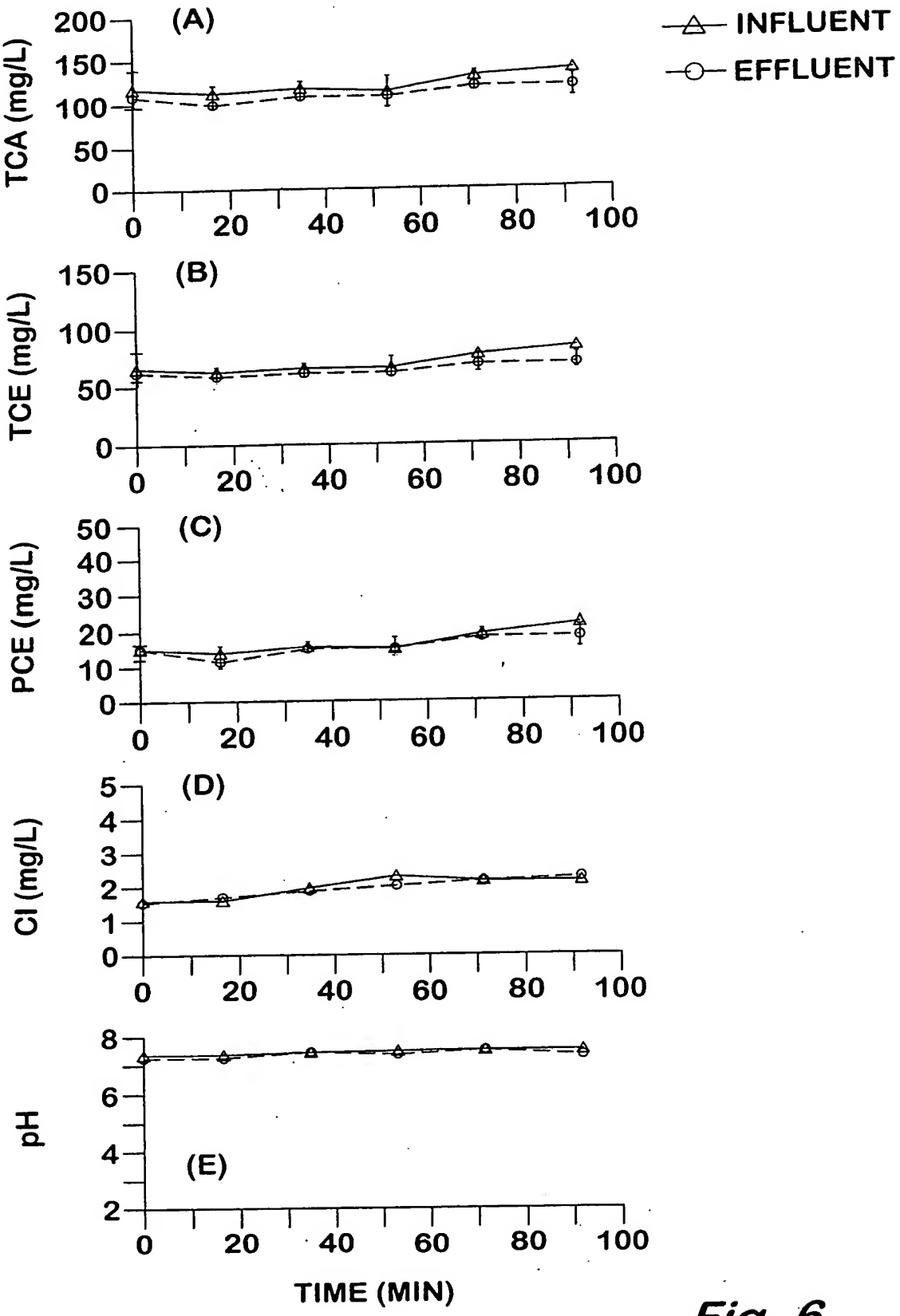
INFLUENT
EFFLUENT
(A)
TCA (mg/L)
200
150
100
50
0
0
20
40
60
80
100
(B)
TCE (mg/L)
150
100
50
0
(C)
PCE (mg/L)
50
40
30
20
10
0
(D)
Cl (mg/L)
5
4
3
2
1
0
pH
8
6
4
2
(E)
TIME (MIN)

Fig. 6

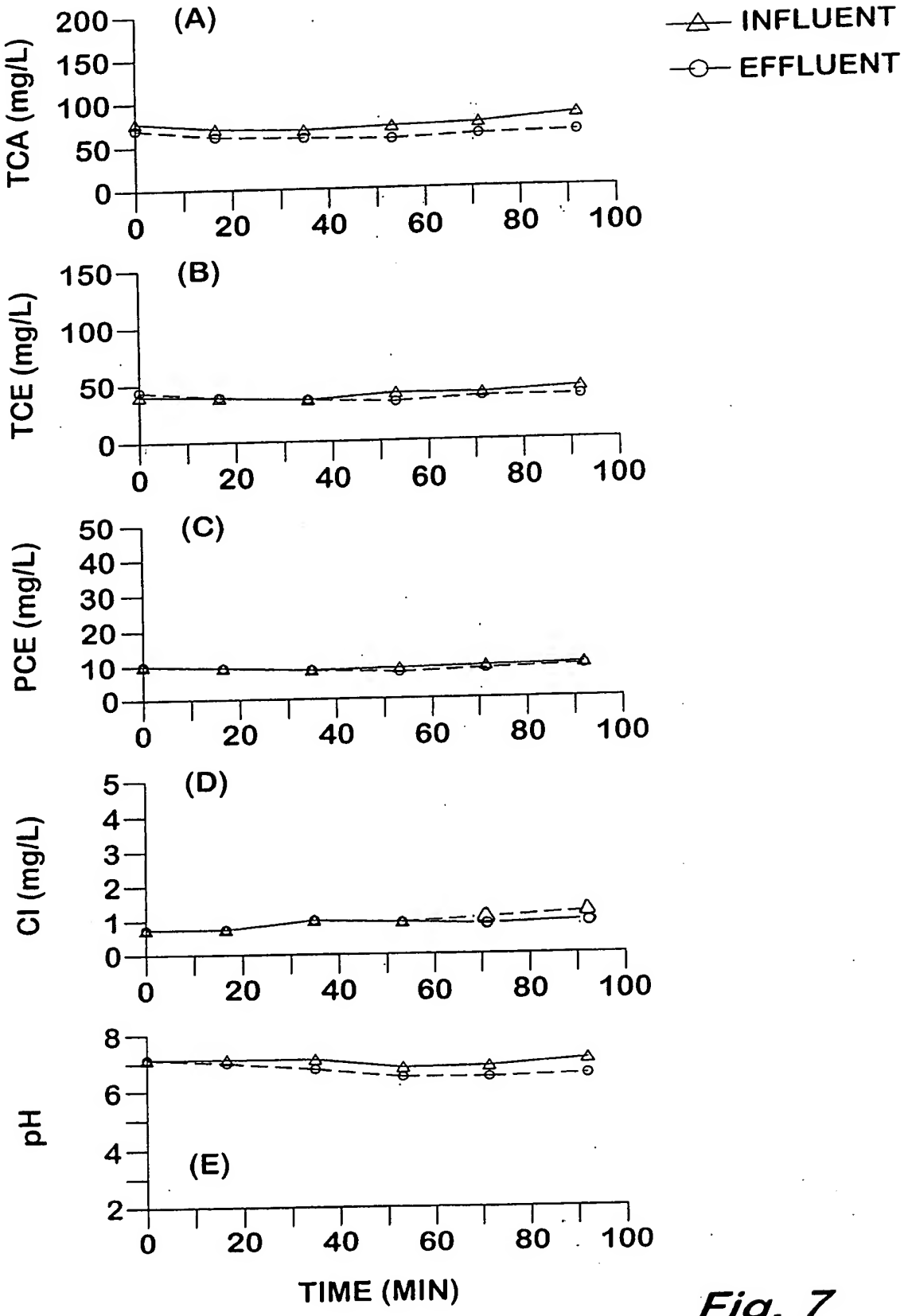
INFLUENT
EFFLUENT
(A)
TCA (mg/L)
200
150
100
50
0
0
20
40
60
80
100
(B)
TCE (mg/L)
150
100
50
0
(C)
PCE (mg/L)
50
40
30
20
10
0
(D)
Cl (mg/L)
5
4
3
2
1
0
(E)
pH
8
6
4
2
TIME (MIN)

Fig. 7

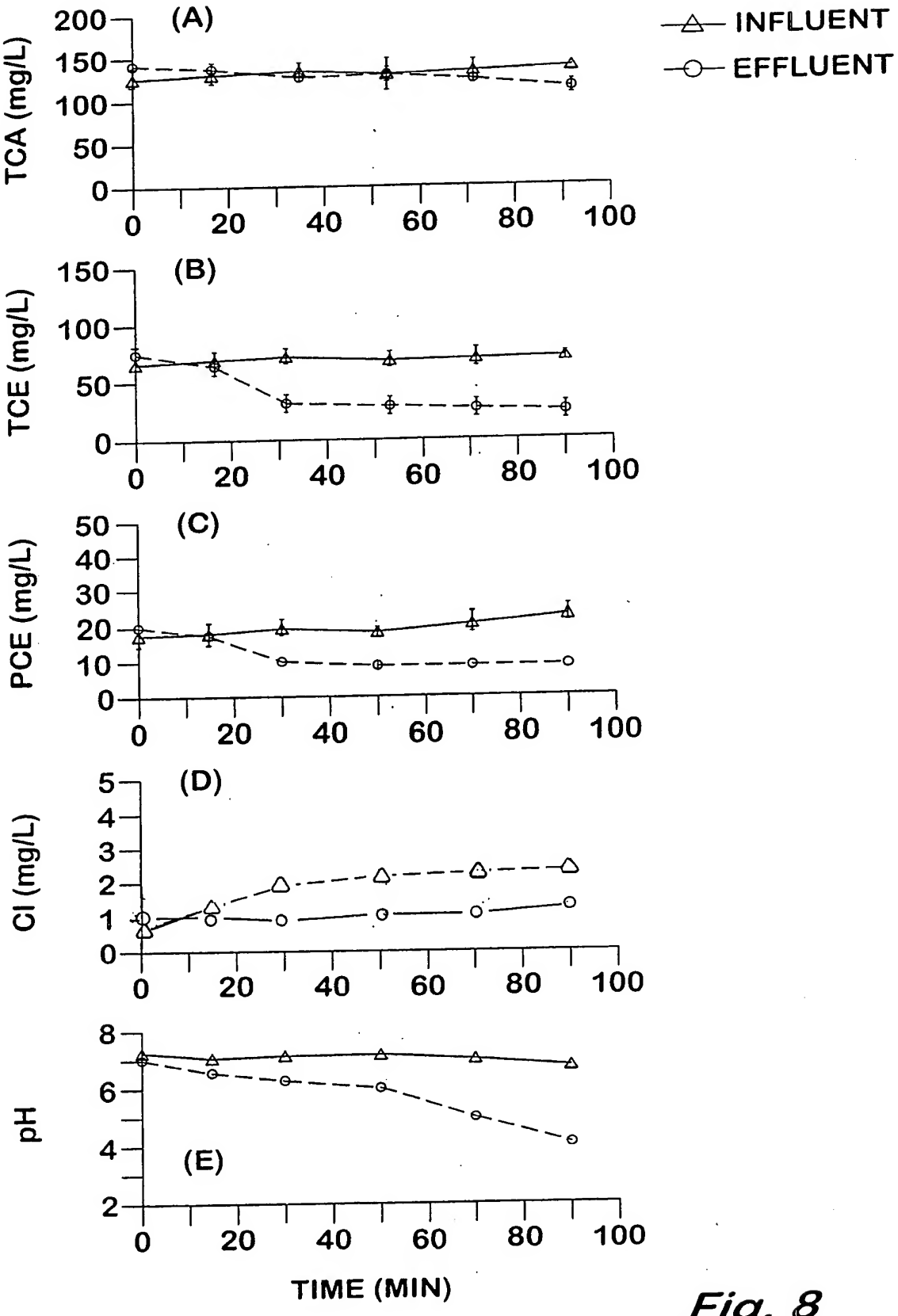
INFLUENT
EFFLUENT
(A)
TCA (mg/L)
200
150
100
50
0
0
20
40
60
80
100
(B)
TCE (mg/L)
150
100
50
0
(C)
PCE (mg/L)
50
40
30
20
10
0
(D)
Cl (mg/L)
5
4
3
2
1
0
(E)
pH
8
6
4
2
TIME (MIN)

Fig. 8

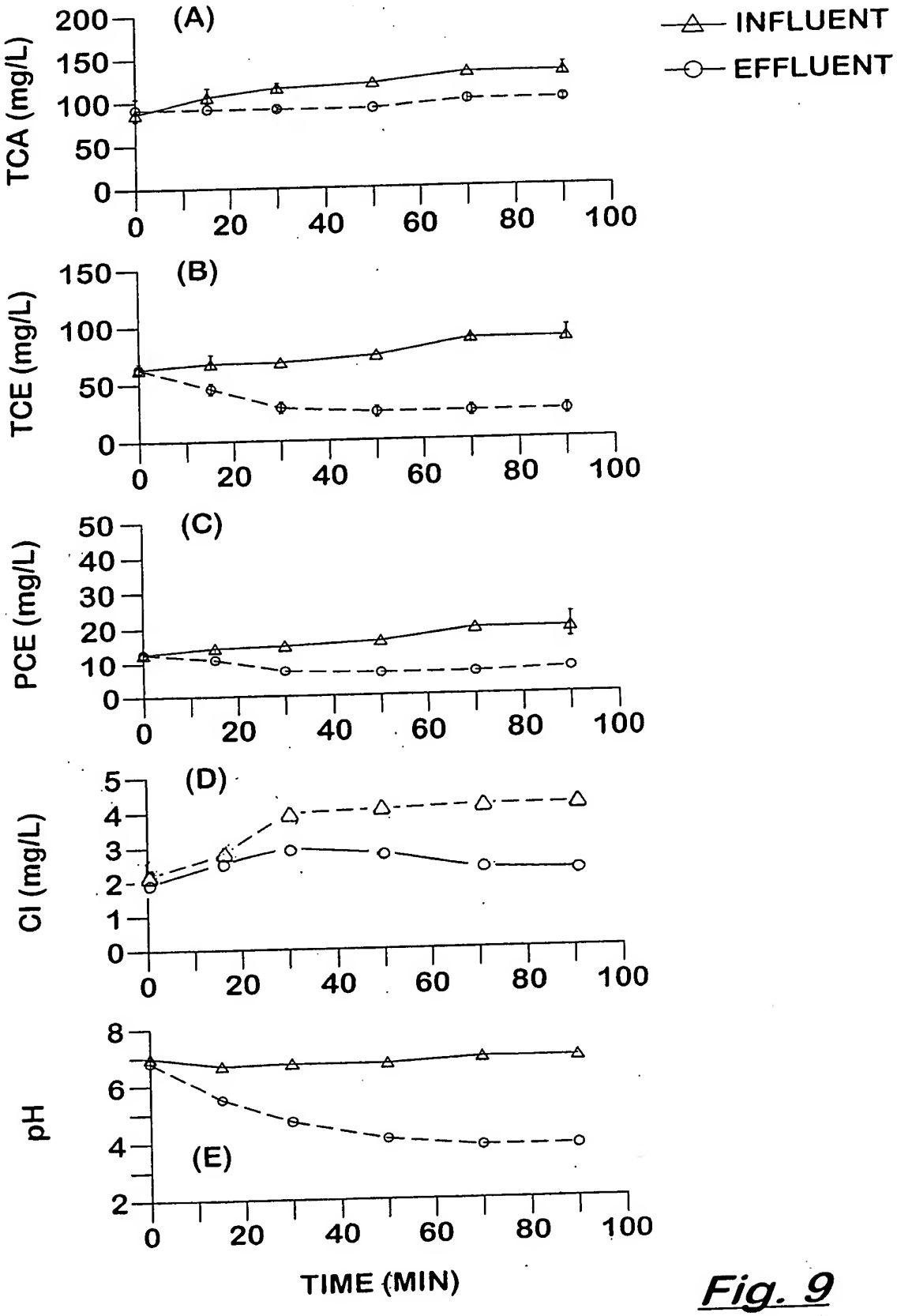
INFLUENT
EFFLUENT
(A)
TCA (mg/L)
200
150
100
50
0
0
20
40
60
80
100
(B)
TCE (mg/L)
150
100
50
0
(C)
PCE (mg/L)
50
40
30
20
10
0
(D)
CI (mg/L)
5
4
3
2
1
0
pH
8
6
4
2
(E)
TIME (MIN)

Fig. 9

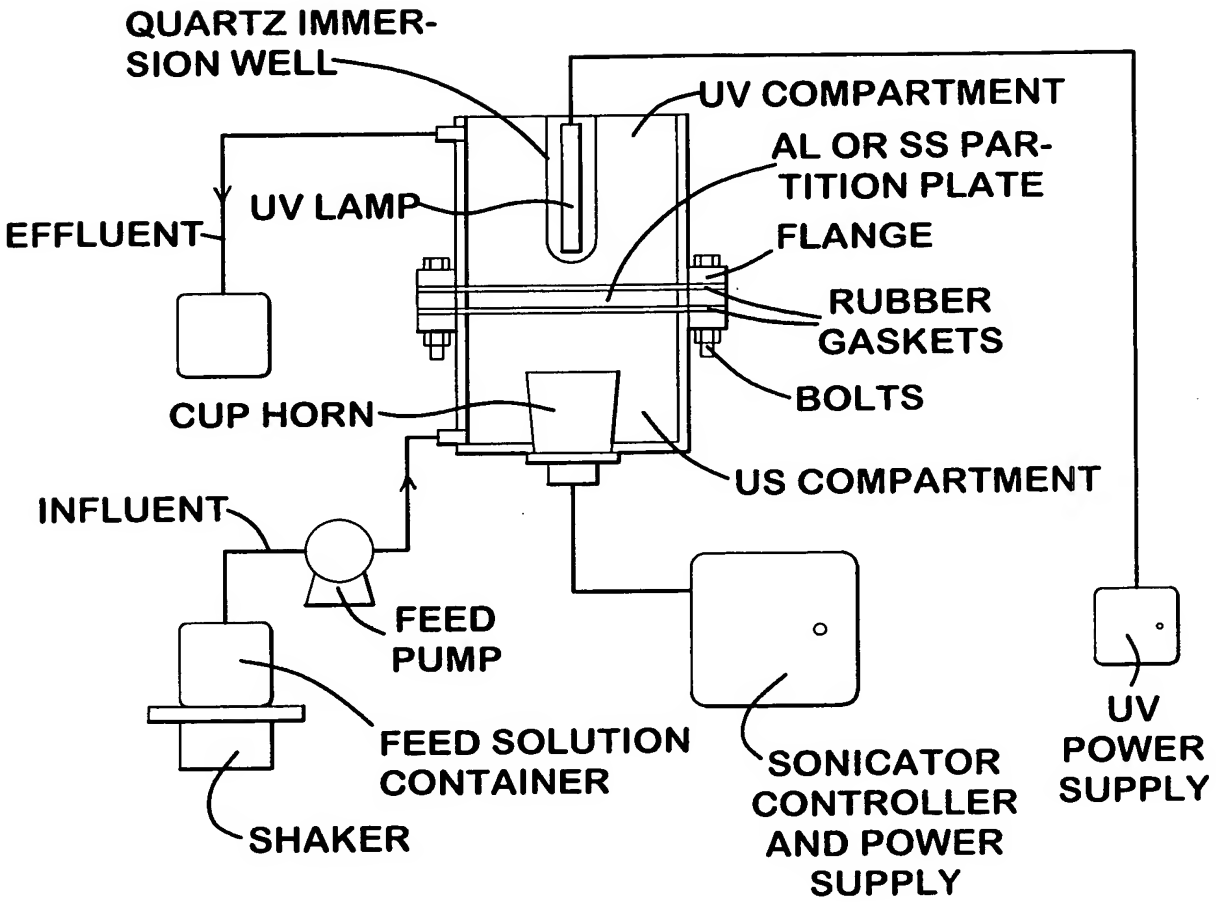

Fig. 10

THE UVUS REACTOR SYSTEM

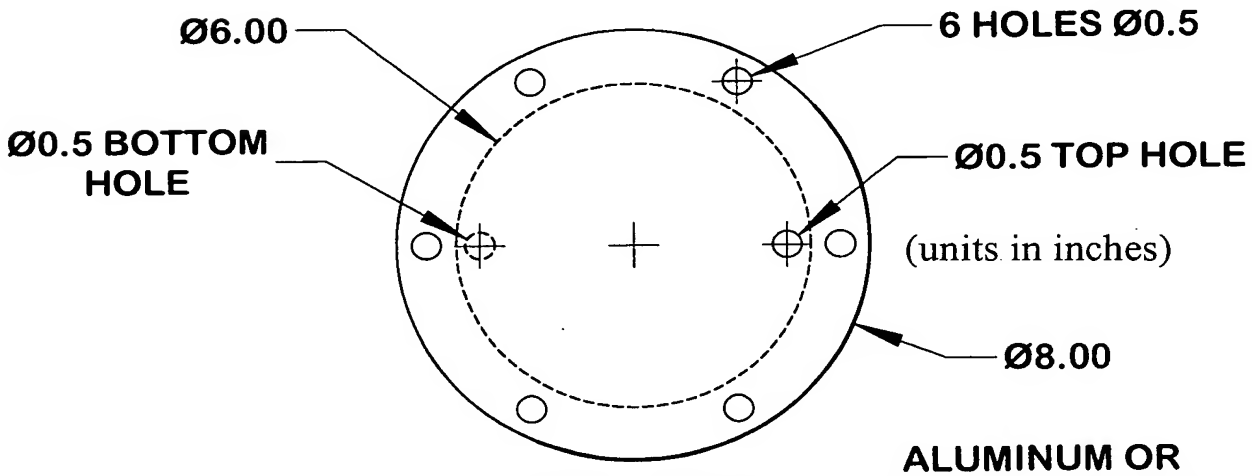

Fig. 11A

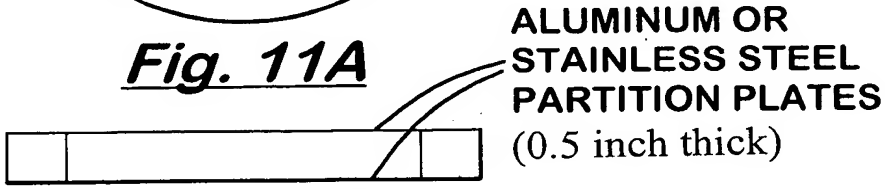

Fig. 11B

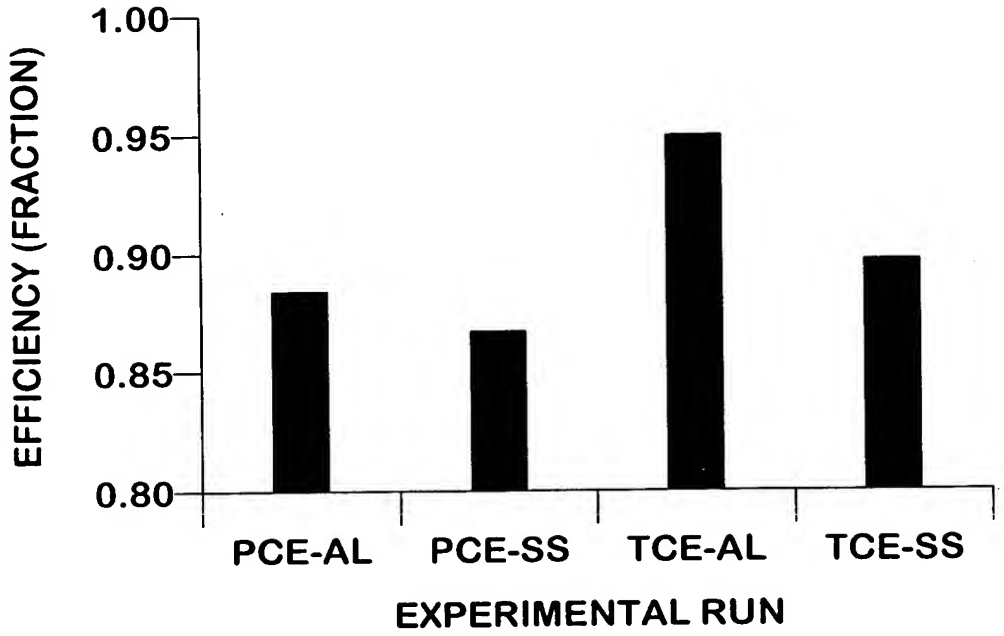

Fig. 12

REACTOR EFFICIENCY (EUVUS) FOR THE REMOVAL OF PCE AND TCE (AL = ALUMINUM, SS = STAINLESS STEEL)

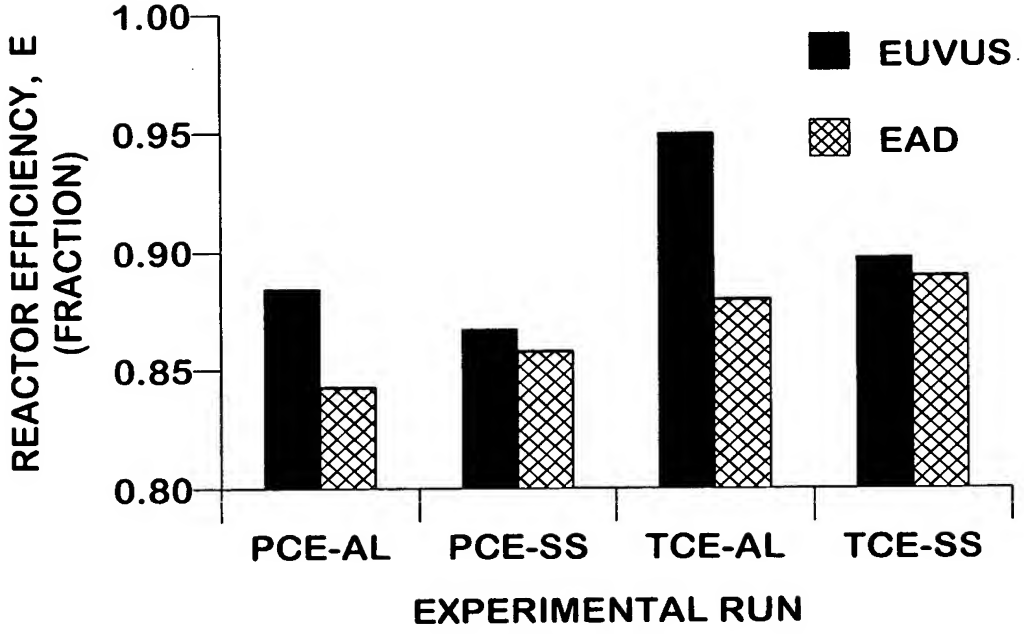

Fig. 13

COMPARISON BETWEEN EUVUS AND EAD FOR THE DECOMPOSITION OF PCE AND TCE